

REMARKS

Introduction

Claims 5-31 have been cancelled without prejudice and applicants reserve the right to file one or more of these cancelled claims in one or more divisional applications. Claims 1-4 have been amended to more clearly define the claimed invention. No new matter has been added by any of the amendments to the claims.

The Information Disclosure Statement filed on January 4, 2005 (hereinafter referred to as "IDS") has been objected to as failing to comply with 37 C.F.R. § 1.98(a)(3).

Claims 1-4 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4 have been rejected under 35 U.S.C. § 102(b) as being anticipated by each of PCT Document No. WO 80/01999 (hereinafter referred to as "Summers") and EPO Document No. EP-A-0 080 326 (hereinafter referred to as "Swainston").

Reconsideration and allowance of this application in light of the following remarks is hereby respectfully requested.

Applicants' Reply to the Objection to the IDS

The Examiner has indicated that the Information Disclosure Statement filed on January 4, 2005 (hereinafter referred to as "IDS") fails to comply with 37 C.F.R. § 1.98(a)(3) because it does not include a concise explanation of the relevance of EPO Patent Document No. 0 005 676 A2. Specifically, the Examiner stated that he did not receive a copy of the International Search Report for PCT application PCT/03/40291 dated December 20, 2004 that should have been enclosed with the IDS.

Therefore, applicants have included herewith a copy of the International Search Report for PCT application PCT/03/40291 dated December 20, 2004 that should have been enclosed with the IDS of January 4, 2005. Thus, for at least the above reasons, applicants' IDS of January 4, 2005 should be acceptable and the objection of the IDS under 37 C.F.R. § 1.98(a)(3) should be withdrawn.

Applicants' Reply to the Rejections Under 35 U.S.C. § 112

The Examiner has rejected claims 1-4 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended each of claims 1-4 to more clearly define the claimed invention. These amendments have made each of the Examiner's rejections under 35 U.S.C. § 112, second paragraph, moot. Applicants respectfully request, therefore, that the rejections of applicants' claims 1-4 under 35 U.S.C. § 112 be withdrawn.

Applicant's Reply to the Rejections Under 35 U.S.C. § 102

Applicants' amended independent claim 1 defines a method of controlling the crystalline structure of ingots and castings, in which a melt is crystallized in helically traveling magnetic fields excited by m-phase systems of helical alternating currents. The method includes "applying a train of said m-phase systems of alternating currents in a superwave pattern to excite said helically traveling magnetic fields, a cluster of intensified energy pulses being superimposed on each m-phase system of alternating currents." Claim 1 further defines its method by stating that "each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of m-phase systems of alternating currents, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an

instantaneous frequency of the major wave associated with the train of m-phase systems of alternating currents." See, for example, applicants' specification, page 11, line 24 through page 13, line 28.

Nowhere does either one of Summers or Swainston, on its own or in combination with the other one of Summers or Swainston, show or suggest applying a train of said m-phase systems of alternating currents in a superwave pattern to excite said helically traveling magnetic fields, wherein a cluster of intensified energy pulses are superimposed on each m-phase system of alternating currents, let alone such a method wherein "each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of m-phase systems of alternating currents, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an instantaneous frequency of the major wave associated with the train of m-phase systems of alternating currents," as is required by applicants' amended independent claim 1.

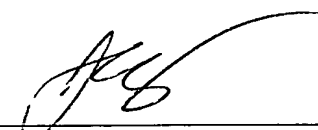
Therefore, applicants respectfully submit that neither Summers nor Swainston shows or suggests each and every element of applicants' independent claim 1, and, therefore, Summers and Swainston do not anticipate applicants' independent claim 1. Thus, for at least the above reasons, applicants' independent claim 1 is allowable over Summers and Swainston. Applicants respectfully request, therefore, that the rejections of applicants' independent claim 1, and any claims dependent therefrom, including claims 2-4, be withdrawn.

Application No. 10/738,910  
Amendment dated February 28, 2007  
Reply to Office Action of August 31, 2006

Conclusion

For at least the reasons set forth above, applicants respectfully submit that the claimed subject matter of claims 1-4 is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

Respectfully submitted,



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Jeffrey C. Aldridge  
Registration No. 51,390  
Agent for Applicants  
FISH & NEAVE IP GROUP  
ROPES & GRAY LLP  
Customer No. 1473  
1211 Avenue of the Americas  
New York, New York 10036  
Tel.: (212) 596-9000  
Fax: (212) 596-9090